

**What is claimed is:**

## 1. An energy efficient elevator system comprising:

an alternating current power supply grid;

one or more variable speed drives for driving elevators motors;

one or more contactors connected between the alternating current power supply grid and the variable speed drive(s), and capable of connecting or disconnecting the variable speed drive(s) from the alternating current power supply grid; and

a control system connected to the alternating current power supply grid, the control system having an output device connected to the contactor(s) and controlling the contactors to connect or disconnect the variable speed drive(s) from the alternating current power supply grid.

## 2. The energy efficient elevator system of claim 1 comprising a three phase AC power source.

## 3. The energy efficient elevator system of claim 1 wherein:

the variable speed drive(s) comprise an isolation transformer having a line side, one or more silicon controlled rectifiers, a control circuit and a ripple filter; and,

the contactor(s) are connected to the line side of the isolation transformer of each variable speed drive.

## 4. The energy efficient elevator system of claim 1 or 3 wherein:

the contactors comprise a coil; and

the control system output device supplies power to the coil of the contactor to connect each variable speed drive to the alternating current power supply grid and cuts power to the coil of the contactor to disconnect each variable speed drive from the alternating current power supply grid.

5. An energy efficient elevator system comprising:

an alternating current power supply grid;

one or more variable speed drives for driving elevator motors;

one or more solid-state devices connected between the alternating current power supply grid and the variable speed drive(s), and capable of connecting or disconnecting the variable speed drive(s) from the alternating current power supply grid; and

a control system connected to the alternating current power supply grid, the control system having an output device connected to the solid-state device(s) and controlling the solid-state device(s) to connect or disconnect the variable speed drive(s) from the alternating current power supply grid.

6. The energy efficient elevator system of claim 5 wherein:

the solid-state device(s) comprise a gate; and

the control system output device closes the gate to connect each variable speed drive to the alternating current power supply grid and opens the gate to disconnect each variable speed drive from the alternating current power supply grid.

7. The energy efficient elevator system of claim 1 or 5 wherein the control system controls the contactor(s) to disconnect variable speed drive(s) that are idle for at least 60 seconds and connect variable speed drive(s) that are or become active.

8. A method of enhancing the energy efficiency of an elevator system by using the energy efficient elevator system of claim 1 or 5.